

REMARKS

Claims 1-21 are pending and stand rejected. Claim 16 has been amended. The Applicant respectfully requests the Examiner's thoughtful reconsideration in view of the following arguments.

CLAIM OBJECTIONS – Claim 16 has been amended to correct an informality noted by the Examiner. As the amendment does not alter the scope of the claim, the Applicant requests that it be entered even though the rejection has been made final.

CLAIM REJECTIONS – 35 USC § 102: The Examiner rejected Claims 1-14, 17, and 19-20 as being unpatentable over USPN 6,384,918 issued to Hubble. Hubble discloses a spectrometer for measuring colors of test strips on a printed sheet. See Hubble, Abstract. The following image is a reproduction of Hubble, Fig. 2 illustrating a spectrometer (12) used to analyze different colored test patches (31) on a printed sheet (30).

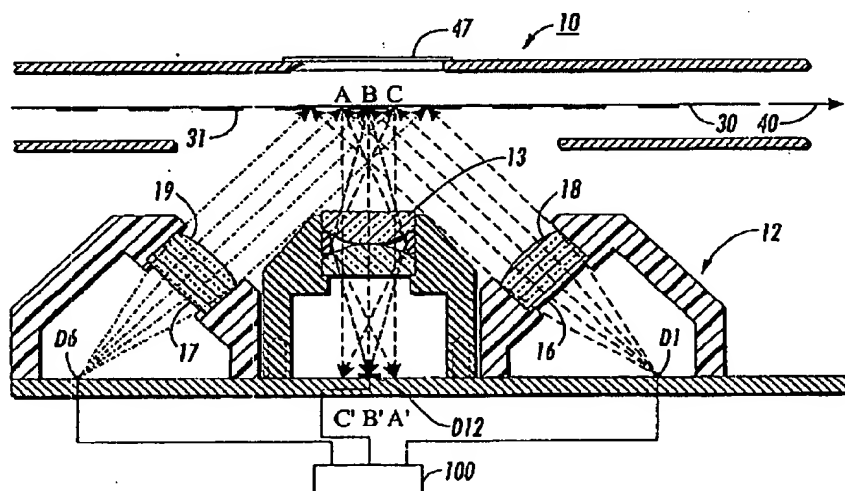


FIG. 2

Hubble's disclosed design includes a circular grouping of LEDs (D1-D10) surrounding a single photo diode detector (D12). Flux from each LED is collimated and directed to be applied to the same test patch (31). A lens then focuses the illuminated test strip on the photo diode detector (D12). Hubble, col. 16, line 58 through col. 17, line 44.

Hubble also mentions that an additional LED emitter and detector (not illustrated) may be used to detect black and white fiduciary or timing marks (33) shown on the test sheet 30 of FIG. 4, reproduced below. Each fiduciary mark (33) indicates the presence of each adjacent test patch (31) in the field of view of the spectrophotometer (12).

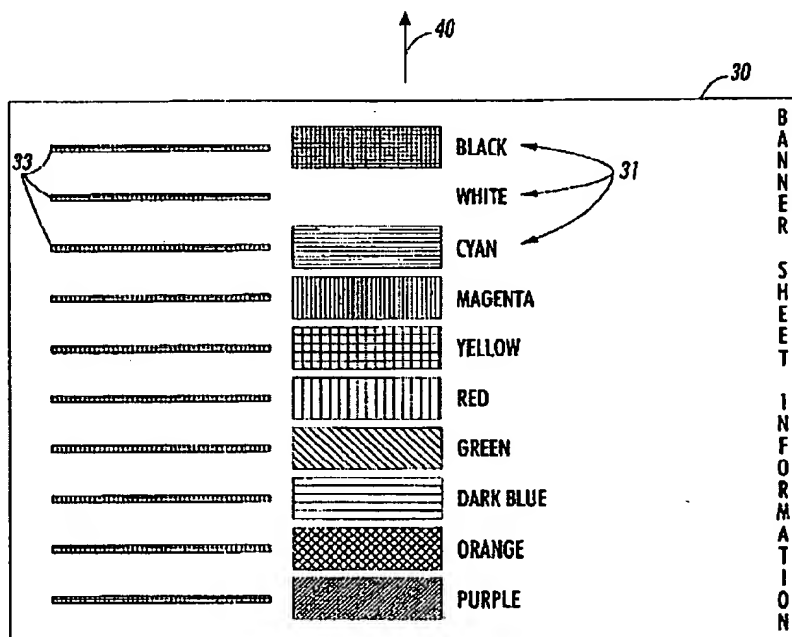


FIG. 4

To summarize, Hubble discloses a spectrometer (12) with a *single* photodetector (D12) that is used to read a *single* region of a test patch (31). Hubble mentions that a second photodetector may be used to detect the presence of fiduciary marks (33).

In comparison, Claim 1 is directed to a system for color measurement for a color hard copy apparatus, having a print media transport path. As previously amended, Claim 1 includes the following limitations:

- a. an illumination source adjacent to said path;
- b. a plurality of photodetectors adjacent to said path; and

- c. test strips each of a single color formed on a sheet of media traveling said path, each strip having a geometric configuration such that each of said photodetectors detects substantially discrete regions of that strip.

Hubble's teachings do not meet these requirements. Hubble discloses one photodetector (D12) that reads a test patch (31) and a second photodetector that detects fiduciary marks (33). Hubble's second photodetector does *not* read test patches (31). Only the photodetector (D12) reads test patches (31). Consequently, test patches (31) do not have a geometric configuration that allow each of a plurality of photodetectors to detect, for each test patch (31), a discrete region of that test patch (31) in the manner required by Claim 1.

For at least this reason, Claim 1 is felt to distinguish over Hubble. Claims 2-4 are also felt to distinguish over Hubble based at least on their dependence from Claim 1.

Claim 5 is directed to a color hard copy apparatus, having a mechanism generating a pattern of test strips of intended uniform colors on media transported along a predetermined path through said apparatus. As amended, Claim 5 includes the following limitations:

- a. adjacent said path downstream of the mechanism, a broad band illumination source mounted for illuminating said strips; and
- b. adjacent said path downstream of the mechanism, an array of sensors mounted for detecting color properties of discrete areas of each test strip.

As clarified above, Hubble teaches a single photodetector (D12) for reading test patches (31). Hubble teaches a second photodetector for detecting fiduciary marks (33). Hubble, however, does not disclose an array of sensors mounted for detecting color properties of *discrete areas* of each test strip in the manner required by Claim 5. Instead, Hubble's single photodetector (D12) reads a single area or region of a test patch (31). Restated, Hubble teaches sequentially illuminating a common region of a test patch (31) and sequentially recording output responses of a single photodetector (D12). Hubble, col. 16, line 58 through col. 17, line 44.

For at least these reasons Claim 5 is felt to distinguish over Hubble. Claims 6-8 each depend from Claim 5 and include all the limitations of that base claim. For the same reasons Claim 5 is patentable, so are Claims 6-8.

Claim 9 is directed to a method for measuring actual color produced by a color hard copy device. As amended, Claim 9 includes the following limitations.

- a. illuminating with broad band light, a region of a color test pattern generated by the device, wherein said region has a first color generated by the device;
- b. discretely sensing actual color characteristics of discrete areas of said region; and
- c. storing data representative of said color characteristics.

As clarified above, Hubble does not disclose discretely sensing actual color characteristics of discrete areas of a given region of a test patch (31) in the manner required by Claim 9. Instead Hubble teaches sequentially illuminating a common or single region of a test patch (31) and sequentially recording output responses of a single photodetector (D12) measuring color characteristics of that common region. Hubble, col. 16, line 58 through col. 17, line 44.

For at least these reasons, Claim 5 is felt to distinguish over Hubble. Claims 10 and 11 each depend from Claim 9 and include all the limitations of that base claim. For the same reasons Claim 9 is patentable, so are Claims 10 and 11.

Each of Claims 12-14 includes, at least indirectly, the following limitation:

- a. an array of sensors located downstream from the printing engine along a direction of travel of the printing medium, the array of sensors being oriented along an axis that is generally parallel to an orientation of the test strips, wherein as each test strip passes within view of the array of sensors, each sensor is positioned to detect a substantially discrete region of that test strip.

Hubble does not teach a sensor array that meets these limitations. Specifically, Hubble does not teach an array of sensors where each sensor is positioned to detect a discrete region of a test strip in the manner required by Claims 12-14. As pointed out above, Hubble teaches a first sensor (D12) that reads test patches (31) and a second sensor that detects fiduciary marks (33). Hubble mentions nothing of an array or even a grouping of sensors where each sensor can detect a discrete region of a single test strip in the manner required by Claims 12-14. For at least this reason, Claims 12-14 are felt to distinguish over Hubble.

Claim 17 includes the following limitation:

- a. an array of photodetectors oriented along an axis that is generally parallel to an orientation of the test strips, wherein as each test strip passes within view of the array of photodetectors, each photodetector is positioned to measure a spectral characteristic a substantially discrete region of that test strip as the test strip passes within view of the sensor array.

As with Claim 15, Hubble does not teach a photodetector array that meets these limitations. For at least this reason, Claims 17 is felt to distinguish over Hubble.

Both of Claims 19 and 20 includes, at least indirectly, the following limitations:

- a. forming a test pattern of color strips on a print medium;
- b. providing an array of photodetectors oriented along an axis that is generally parallel to an orientation of the test strips;
- c. urging the print media past the array; and
- d. for each test strip, using each photodetector in the array to measure a spectral characteristic a substantially discrete region of that test strip as the test strip passes within view of the array.

Hubble does not teach the provision of such an array of photodetectors nor does Hubble teach the use of the photodetectors in the manner prescribed. Specifically, Hubble does not teach or suggest using each of an array of photodetectors to measure a spectral characteristic a substantially discrete region of a test strip as required by Claims 19 and 20. For at least these reason, Claims 20 and 21 are felt to distinguish over Hubble.

CLAIM REJECTIONS – 35 USC § 103: The Examiner rejected Claims 15, 16, 18, and 21 as being unpatentable over Hubble in view of USPN 5,508,826 issued to Lloyd. Claims 15 and 16 ultimately depend from Claim 12. Claim 18 depends from Claim 17, and Claim 21 ultimately depends from Claim 19. For the same reasons Claims 12, 17, and 19 are patentable, so are Claims 15, 16, 18, and 21.

CONCLUSION: The foregoing is believed to be a complete response to the outstanding Office Action. Claims 1-21 are felt to be in condition for allowance. Consequently, early and favorable action allowing these claims and passing the application to issue is earnestly solicited. The foregoing is believed to be a complete response to the outstanding Office Action.

Respectfully submitted,
Algrid M. Gudaitis

By 
Jack H. McKinney
Reg. No. 45,685

March 24, 2005